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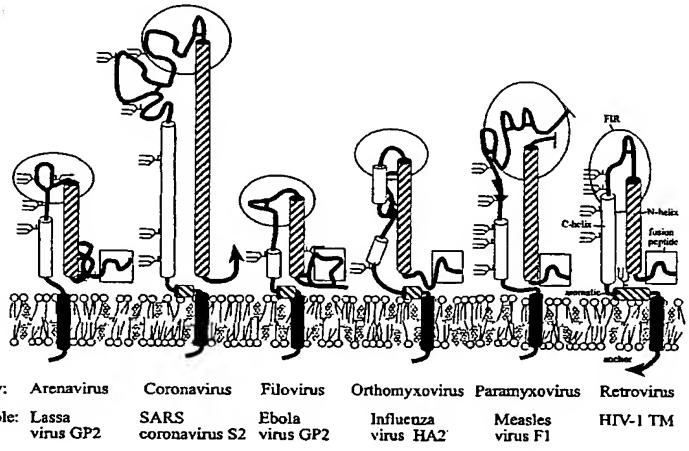
(54) **Title:** METHOD OF PREVENTING VIRUS: CELL FUSION BY INHIBITING THE FUNCTION OF THE FUSION INITIATION REGION IN RNA VIRUSES HAVING CLASS I MEMBRANE FUSOGENIC ENVELOPE PROTEINS

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|---|---|---|---|---|---|---|
| Family: | Arenavirus | Coronavirus | Filovirus | Orthomyxovirus | Paramyxovirus | Retrovirus |
| Example: | Lassa virus GP2 | SARS coronavirus S2 | Ebola virus GP2 | Influenza virus HA2 | Measles virus F1 | HIV-1 TM |

(57) **Abstract:** The present invention relates to a method of preventing or inhibiting viral infection of a cell and/or fusion between the envelope of a virus and the membranes of a cell targeted by the virus (thereby preventing delivery of the viral genome into the cell cytoplasm, a step required for. viral infection). The present invention particularly relates to the families of RNA viruses, including the arenaviruses, coronaviruses, filoviruses, orthomyxoviruses, paramyxoviruses, and retroviruses, having Class I membrane fusion proteins as the fusion proteins that mediate this fusion process. The present invention provides for a method of identifying a conserved motif or domain called the fusion initiation region (FIR) in these viruses. The present invention further provides for methods of preventing infection by such viruses, by interfering with their FIR. The present invention further provides for methods of treatment and prophylaxis of diseases induced by such viruses.

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